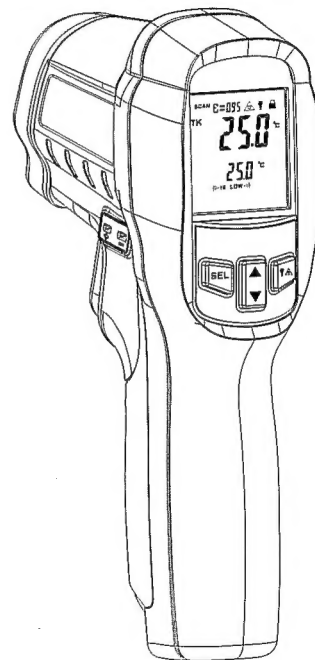


# **User's Manual**

## **Infrared Thermometer**



*Please read this user's manual thoroughly before using this unit  
and keep it properly for your future reference.*

**Emissivity Table**

<b>Substance</b>	<b>Thermal emissivity</b>	<b>Substance</b>	<b>Thermal emissivity</b>
Aluminium	0.30	Glass	0.90 to 0.95
Asphalt	0.95	Iron oxides	0.78 to 0.82
Concrete	0.95	Lacquer	0.80 to 0.95
Leather	0.95	Plastic	0.85 to 0.95
Ceramic	0.95	Paper	0.70 to 0.94
Copper	0.50	Sand	0.90
Brick	0.90	Rubber	0.95
Carbon	0.85	Timber	0.94
Fatlute	0.94	Textiles	0.94
Frozen food	0.90	Lead	0.50
Hot food	0.93	Marble	0.94
Ice	0.98	Cloth(black)	0.98
Snow	0.90	Plaster	0.8 0to 0.90
Human skin	0.98	Water	0.93

◆ Do not immerse it in water.

◆ Do not store it in high temperature or humidity.

### 10.7 Emissivity

◆ Most (90%) organic materials and painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit).

## 11. Accessories

① User's Manual

② 9V Battery

③ Type-K probe

④ Hook

⑤ Carrying pouch with gift box

## Contents

1. Introduction .....	1
2. Features .....	2
3. Application .....	3
4. Safety.....	3
5. Field of View .....	4
6. Specifications .....	5
7. Meter Description.....	7
8. LCD Display Description .....	8
9. Operating Instruction.....	9
10. Notes.....	13
11. Accessories .....	15

## 1. Introduction

Congratulations on your purchase of our professional non-contact infrared thermometers with Type-K input measurement.

These units can provide fast, easy and accurate temperature readings. With the non-contact (IR) and contact (TK) technology, they can be used to measure the surface temperature of hard-to-reach objects like electrified equipment or moving objects, without any damage to them.

◆ As distance (D) from the object increases, the spot size (S) of the area measured by the unit becomes larger.

### 10.4 Locating a hot spot

◆ To find a hot spot, first aim the thermometer to the outside of target area, then scan across in an up and down motion until the hot spot is located.

### 10.5 Notice

◆ Not recommend for measuring shiny or polished metal surfaces like stainless steel, aluminum, etc.

◆ No not make measurement through transparent surface such as glass.

◆ If the surface of the object under test is covered with frost, oil, grime, etc., clean it before taking measurement.

### 10.6 Maintenance

◆ Do not use volatile liquids to clean the unit, wipe it with dry soft cloth.

◆ Do not disassemble the unit, repair it by qualified personnel

## 10. Notes

### 10.1 Work Principle

- ◆ The infrared thermometer is designed for measuring surface temperature of an object.
- ◆ The optical sensor can emit, reflect and transmit energy, which is collected and focused on a detector, then translate it into the temperature reading by electronics and displayed on the LCD screen.
- ◆ The laser is used for aiming the target object only.

### 10.2 Field of View

- ◆ The object under test should be larger than the spot size calculated by the field of view diagram.
- ◆ The smaller the target object is, the closer the meter should be to it for accurate measuring.
- ◆ When accuracy is critical, make sure the target is at least twice as large as the spot size.

### 10.3 Distance & Spot Size

## 2. Features

- ◆ Fast and easy measurement
- ◆ Precise IR and TK temperature measurement
- ◆ Built-in dual laser pointers increase the target accuracy
- ◆ Adjustable emissivity: 0.1 ~ 1.0
- ◆ °C/°F selection
- ◆ MAX, MIN, DIF, AVG record
- ◆ REC datalogger function for 12 points
- ◆ LCD display with backlight
- ◆ Resolution 0.1 °C/°F
- ◆ Trigger lock
- ◆ Adjustable High/Low alarm
- ◆ Automatic range selection
- ◆ Automatic data hold function
- ◆ Automatic power off

### 3. Application

These units can be widely used in Food preparation, Safety and Fire inspection, Plastic molding, Asphalt, Marine, Printing ink, dryer temperature and Fleet maintenance.

### 4. Safety

- ◆ Use extreme caution when the laser beam is turned on.
- ◆ Do not point the beam toward human or animal eyes.
- ◆ Do not allow the beam to strike the eye from a reflective surface.
- ◆ Do not use the laser near explosive gases.

## CAUTION

Don't target human and animal eyes




WAVELENGTH 630-670nm

OUTPUT: <1mW

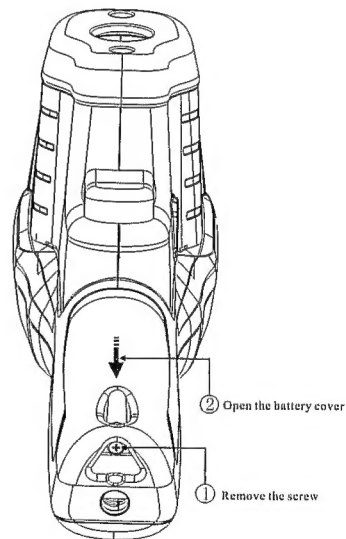
CLASS II LASER PRODUCT

EN 60825-1:1994/A1 1:1996/A2:2001/A1:2002

### 9.3. Battery Replacement

9.3.1 When the low battery icon “ ” appears, replace the meter's battery.

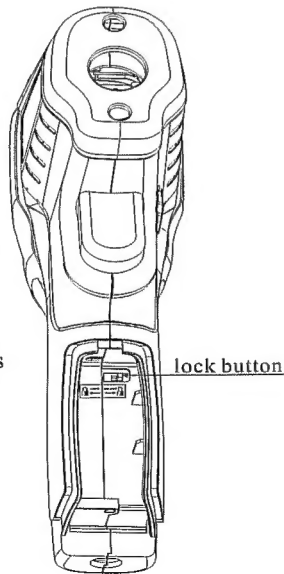
9.3.2 Open the battery cover, replace the 9V battery and close the cover.



② After power on the meter, keep pressing button "SEL" until "E" icon flashes on the screen, then loose button "SEL", enter into Emissivity Mode, press button "▲" to adjust emissivity value, then keep pressing button "SEL" return to the normal measurement mode. (After entering into Emissivity Mode, momentarily press button "SEL" can set the High/Low alarm value ).

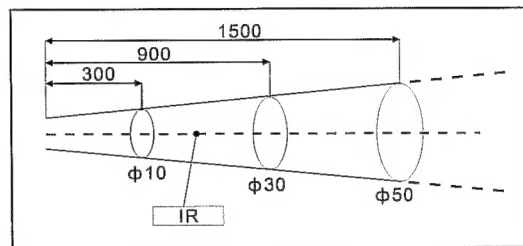
#### 9.2.4 LOCK Button

After power on the meter, lock the unit on for continuous measurement by sliding the switch to right LOCK position. After finish the measurement, slide the switch to left UNLOCK position. (After entering into continuous measurement, the trigger button will not work.)



## 5. Field of View

The meter's field of view is 30:1, for example, if the meter is 30 inches from the target spot, the diameter of the target must be at least 1 inch. Other distance ratios are show as Fig. 1 in the field of view diagram.




(Fig: 1 )

## 6. Specifications

Range	IR:-50~850℃/ -58~1472℉	IR:-50~1050℃/ -58~1922℉	IR:-50~1350℃/ -58~2462℉
	TK:-50~1370℃/ -58~2498℉	TK:-50~1370℃/ -58~2498℉	TK:-50~1370℃/ -58~2498℉
Accuracy	IR:-50~0℃/-58~32℉: ±4℃/7.2℉		
	IR:0~500℃/32~932℉: ±1.5%±2℃/3.6℉		
	IR: 500~850℃/ 932~1472℉: ±2%±2℃/3.6℉	IR: 500~1050℃/ 932~1922℉: ±2%±2℃/3.6℉	IR: 500~1350℃/ 932~2462℉: ±2%±2℃/3.6℉
	TK:-50~1370℃/-58~2498℉: ±1.5%±1℃/1.8℉		
D:S	30:1		
Emissivity	Adjustable: 0.10~1.0		
Resolution	0.1℃(0.1℉) < 1000 , 1℃(1℉) > 1000		
Response Time	< 250 ms		
Spectral Response	8~14um		
Over range indication	LO		HI
Polarity Display	Auto display, "-" indicates negative, while positive with no sign.		
Diode Laser	Output<1mW, 630~670nm, class 2 (II)		
Automatic Power Off	Meter shuts off automatically after 35 seconds		
Operating Temp.	0℃~50℃/32℉~122℉		



## 9.2 Button Function


### 9.2.1 UP/DOWN button

① In Measurement Mode, press button " to switch the temperature unit °C or °F.


② In REC Mode, press button " to review the latest 12 record readings.

### 9.2.2 Laser/Backlit button

① In Measurement Mode, press button " to turn on/off laser pointer, In "HOLD" Mode, press button " to turn on/off backlight.

② In Measurement Mode, keep pressing button " to select IR temperature measurement or TK temperature measurement.

### 9.2.3 SEL Button

① After power on the meter, press button " to review REC, MAX, MIN, DIF, AVG, High/Low Alarm values and TK measurement.



## 9. Operating Instruction

### 9.1 Operating steps:

- ① Hold the meter by its handle grip and point it toward the surface to be measured.
- ② Pull and hold the Trigger to turn the meter on, the "SCAN" icon will appear and begin testing.
- ③ The surface temperature being tested will be displayed on the LCD screen.
- ④ Release the trigger, the "HOLD" icon will appear, and the reading will be held for several seconds.
- ⑤ The meter will automatically shut off after 35 seconds.

**Measurement Note:** If the meter used in an ambient temperature with wide temperature change, awaiting it at least 30 minutes to adjust it.

The laser is designed for aiming only; it can be shut off while operating in short distance to save the battery.

Storage Temp.	-20℃～60℃/-4°F～140°F
Relative Humidity	Operating: 10~95%RH; Storage: <80%RH
Power Supply	9V battery
Weight	275g
Dimensions(L*W*H)	95*83*192mm
Safety	"CE" Comply with EMC

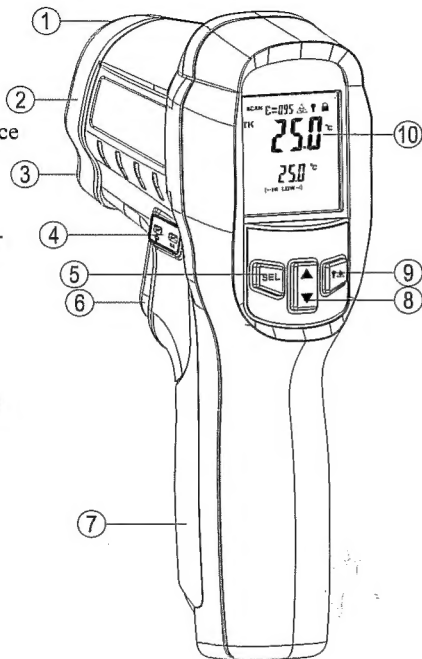
### Notes:

◆Accuracy can be ensured while the temperature is at 18℃～28℃(64°F～82°F) and humidity is less than 80 % RH.

◆**Field of View:** Make sure that the target is larger than the unit's spot size. The smaller the target, the closer you should be to it. When accuracy is critical, make sure the target is at least twice as large as the spot size.

## 7. Meter Description

- ①③ Laser pointer
- ② IR sensor
- ④ K-type probe interface
- ⑤ SET button
- ⑥ Measurement trigger
- ⑦ Battery cover
- ⑧ UP/DOWN button
- ⑨ Laser/Backlit button
- ⑩ LCD Display



## 8. LCD Display Description

- ① Measurement Icon
- ② Emissivity Icon
- ③ Laser Icon
- ④ Backlit Icon
- ⑤ Trigger Lock
- ⑥ °C/°F Icon
- ⑦ DIF Icon
- ⑧ AVG Icon
- ⑨ MIN Icon
- ⑩ Temp. values for the MAX, MIN, DIF, AVG, HAL, LAL, and REC
- ⑪ Low Battery Icon
- ⑫ Low Alarm Set
- ⑬ Low Alarm Icon
- ⑭ High Alarm Icon
- ⑮ High Alarm Set
- ⑯ Type-K temperature Icon
- ⑰ MAX Icon
- ⑱ Data Record Icon
- ⑳ Data Hold Icon

